

## Digital Aviation Services in the Aviation Weather Testbed

Steven Lack, Benjamin Schwedler, Austin Cross, Bruce Entwistle, Kim Runk, Cammye Sims-Uskievich, and Starr McGettigan

Aviation forecasting is one of the oldest decision support services and a major component of the National Weather Service (NWS) mission. To better support the needs of the stakeholders of aviation services consistency between products remains a top priority. Currently, aviation forecasting duties are shared between national, regional, and local NWS entities. The Aviation Weather Center (AWC) provides international and national guidance, Alaska Aviation Weather Unit (AAWU) and the Honolulu Forecast Office (HFO) provide regional guidance for their regions, the Center Weather Service Units (CWSUs) provide regional expertise on the Air Route Traffic Control Centers (ARTCCs), and the Weather Forecast Offices (WFOs) provide airport specific information on the local level which includes the Terminal Aerodrome Forecast (TAF). The strategy for providing consistent aviation products is the basis for Digital Aviation Services (DAS) and involves utilizing a common operating platform which in turn fosters integrated collaboration between NWS entities.

The local WFOs are moving toward adopting enhanced short-term forecasting (0-36 hours) by updating their forecast grids more frequently (3-hourly) providing a better picture of impactful weather. Adding aviation grids to this enhanced short term effort is critical for the success of DAS, but must be coupled with consistency among WFOs, and between WFOs and regional and national centers. To facilitate consistency of aviation grids, it is proposed that national scale cloud and visibility guidance will be provided by the AWC and would subsequently be passed to the local WFOs for manipulation at the local level. The resulting product would be considered the final national picture for ceiling and visibility from which products at the national, regional, and local level could efficiently be derived. These products include the G-AIRMET, area forecast, and the TAF. Using the NDFD framework, point-and-click TAFs and area forecasts could be provided for locations outside the current set of locations.

The collaboration needed to facilitate moving toward the goals of DAS involves partnerships across NOAA and the FAA. This collaboration is being worked through the Aviation Weather Testbed. Currently, modeling branches of NOAA (NOAA/GSD, NWS/EMC, and NWS/MDL) are collectively working on improving cloud and visibility forecasts. The AWC is evaluating and providing feedback on requirements to the modeling groups. NOAA/GSD is also providing enhanced tools for both the WFO and AWC to facilitate common operating platforms within AWIPS for the easy exchange of data. The Operations Proving Ground (OPG) is providing a testing and evaluation environment of the 2-way data exchange between AWC and the local WFOs. Collaboration with the newly established Arctic Testbed in Alaska region is establishing a sharing of tools and techniques forging a closer connection with offices outside of the contiguous states (CONUS). Partnering with the AAWU and HFO is connecting AWC with the two other Meteorological Watch Offices (MWOs) toward moving to a common platform among offices performing similar duties. Finally, the resulting products are sent to the Aviation Weather Demonstration and Evaluation (AWDE) group within the FAA where new collaborated products will be evaluated by aviation end-users.